CLAIMS

WHAT IS CLAIMED IS:

1. A process for providing a polymeric colloid, said process comprising:

dissolving a polymer in a first solvent to form a first solution;

adding a second solvent to the first solution to form a second solution;

adding a third solvent to the second solution to provide the polymeric colloid,

wherein: (a) the first, second and third solvents have Drago polarities differing by less than 0.2; (b) the second solvent is miscible with the third solvent; and (c) the third solvent predominantly comprises water.

2. The process of claim 1, wherein the polymer comprises at least one member selected from the group consisting of poly (dl-lactide-co-glycolide) (PLGA), poly(lactic acid) (PLA) and poly(ε-caprolactone) (PCL).

3. The process of claim 1, wherein the first solvent is tetrahydrofuran (THF) or N-methyl-2-pyrrolidone (NMP).

4. The process of claim 1, wherein the second solvent alters a polarity of the first solution.

5. The process of claim 1, wherein the second solvent is acetone.

6. The process of claim 5, wherein the polymer comprises at least one member selected from the group consisting of poly (dl-lactide-co-glycolide) (PLGA), poly(lactic acid) (PLA) and poly(ε-caprolactone) (PCL), and the first solvent is tetrahydrofuran (THF) or N-methyl-2-pyrrolidone (NMP).

7. The process of claim 6, wherein the third solvent consists essentially of water.

8. The process of claim 1, wherein the first solvent has a first Drago polarity of 0.80-0.99, the second solvent has a second Drago polarity of 0.80-0.99 and the third solvent has a third Drago polarity of 0.80-0.99.

9. The process of claim 1, wherein the second solution is a miscible single-phase system.

10. The process of claim 1, conducted without an emulsifying agent, a stabilizing agent and mechanical emulsification.

11. The process of claim 1, wherein the polymeric colloid comprises nanoparticles.

12. The process of claim 1, wherein at least about 70 wt.% of the polymer is converted to particles of the polymeric colloid.

13. The process of claim 12, wherein a size of the particles is a function of a viscosity, a concentration and a polarity of at least one of the first, second and third solvents.

14. The process of claim 1, further comprising removing at least a portion of the solvents from the polymeric colloid under reduced vapor pressure.

15. The process of claim 1, further comprising adding at least one additional polymer to the second solution along with the third solvent, such that the polymeric colloid possesses a property of the at least one additional polymer.

16. The process of claim 15, wherein the at least one additional polymer is at least one member selected from the group consisting of (poly(styrenesulfonate), poly(acrylic acid sodium salt), poly(allylamine), poly(L-lysine-HCl), heparin sulfate, sulfated proteoglycans, collagen, alginic acid sodium salt and hyaluronic acid.

17. A polymeric colloid provided by the process of claim 1.

18. The polymeric colloid of claim 17, comprising a plurality of particles having a mean diameter of about 0.001 nm to about 1000 nm.

19. The polymeric colloid of claim 17, comprising a plurality of particles containing a composite of: (a) a first component derived from the polymer in the first solvent; and (b) a second component derived from a second polymer added to the second solution along with the third solvent.

20. The polymeric colloid of claim 19, wherein the second component is derived from a second polymer selected from the group consisting of (poly(styrenesulfonate), poly(acrylic acid sodium salt), poly(allylamine), poly(L-lysine-HCl), heparin sulfate, sulfated proteoglycans, collagen, alginic acid sodium salt and hyaluronic acid.

21. The polymeric colloid of claim 19, wherein the first component is derived from poly (dl-lactide-co-glycolide) and the second component is derived from (poly(styrenesulfonate), poly(acrylic acid sodium salt), poly(L-lysine-HCl) or heparin.

22. The polymeric colloid of claim 21, wherein the particles have a mean diameter of 200 nm to 500 nm.

23. The polymeric colloid of claim 21, wherein the particles have a zeta potential different from a reference zeta potential of a reference particle consisting essentially of poly (dl-lactide-co-glycolide).